REMARKS

Applicant has reviewed the Office Action mailed on August 4, 2006 as well as the art cited. Claim 75 has been added. Claims 1-11, 28-38, 43, 44 and 74-75 are pending in this application.

Rejections Under 35 U.S.C. § 103

Claims 1-6, 8-11, 28-33, 35-38, 43 and 44 were rejected under 35 USC § 103(a) as being unpatentable over Wegleitner et al. (U.S. Patent No. 6,480,487) in view of Rawson et al. (U.S. Patent No. 6,028,867). Applicant respectfully traverses this rejection.

Claim 1:

A system for extending the effective distance of digital subscriber line service, the system comprising:

a central office terminal, the central office terminal including:

a data interface; and

a plurality of line units;

at least one communication link, coupled to one of the plurality of line units, that carries signals using digital subscriber line service, wherein each communication link is a twisted pair;

at least one remote access multiplexer, coupled to the at least one communication link, wherein the at least one remote access multiplexer includes a plurality of ports that are adapted to provide digital subscriber line service;

the remote access multiplexer adapted to multiplex signals between the plurality of ports and the at least one communication link; and

wherein the at least one remote access multiplexer is located at a distance from the central office terminal so as to provide digital subscriber line service to user terminals that are located more than 12 kilofeet from the central office terminal.

Applicant asserts that nothing in Wegleitner or Rawson, taken alone or together, teaches or suggests all the claimed limitations of claim 1. In particular, nothing in Wegleitner or Rawson teaches or suggests "at least one communication link, ***coupled to one of the plurality of line***

units, that carries signals using digital subscriber line service, wherein each communication link is a ***twisted pair***" and "at least one remote access multiplexer, ***coupled to the at least one communication link.***"

In rejecting claim 1, the Examiner stated "Wegleitner discloses a system for extending the effective distance of digital subscriber line service, the system comprising . . . a plurality of line units (16); at least one communication link (18, 22, 22'), coupled to one of the plurality of line units . . . at least one remote access multiplexer (20)." However, with regards to the cited elements, Wegleitner states "conventional ***subscriber premises equipment 16*** have been ***connected directly*** to a serving central office 12 by twisted wire pair lines 18." In addition, Wegleitner states "a remote terminal 20 serves as the copper interface between the central office 12 and ***subscriber loops 22 and 22' for connecting the subscriber premises equipment*** 14 and 15 within the digital loop carrier serving area, respectively. In particular, the remote terminal 20 receives a set of ***optical fibers*** 24 carrying digitally multiplexed voice channels to and from the central office 12." col. 6 lines 21-47 (emphasis added).

Hence Wegleitner fails to teach or suggest "at least one communication link, ***coupled to one of the plurality of line units***, that carries signals using digital subscriber line service, wherein each communication link is a ***twisted pair***" and "at least one remote access multiplexer, ***coupled to the at least one communication link***". Furthermore, nothing in Rawson or Wegleitner, taken alone or in combination, teaches or suggests the above limitation. Claim 1, therefore, is not obvious over Wegleitner in view of Rawson. Applicant respectfully requests that the rejection be withdrawn.

Claim 2-11 depend directly from claim 1 and, thus, are allowable for at least the reasons stated above with respect to claim 1. Applicant, therefore, requests that the rejections be withdrawn.

Claim 28:

A system for extending the effective distance of digital subscriber line service, the system comprising:

a central office terminal, the central office terminal including:

a data interface, and

a plurality of line units;

at least one communication link, coupled to one of the plurality of line units, that carries signals using digital subscriber line service, wherein each communication link is a twisted pair;

at least one remote access multiplexer, coupled to the at least one communication link, wherein the at least one remote access multiplexer includes:

a first port, adapted to be coupled to the at least one communication link,

a plurality of subscriber ports, adapted to be coupled to a plurality of communication links, and

at least one multiplexer unit, coupled to the first port and the plurality of subscriber ports, the multiplexer unit adapted to multiplex signals between the first port and the plurality of subscriber ports; and

wherein the at least one remote access multiplexer is located at a distance from the central office terminal so as to provide digital subscriber line service to user terminals that are located more than 12 kilofeet from the central office terminal.

Applicant asserts that nothing in Wegleitner or Rawson, taken alone or together, teaches or suggests all the claimed limitations of claim 28. In particular, nothing in Wegleitner or Rawson teaches or suggests "at least one communication link, ***coupled to one of the plurality of line units***, that carries signals using digital subscriber line service, wherein each communication link is a ***twisted pair***" and "at least one remote access multiplexer, ***coupled to the at least one communication link***".

In rejecting claim 28, the Examiner stated "Wegleitner discloses a system for extending the effective distance of digital subscriber line service, the system comprising . . . a plurality of line units (16); at least one communication link (18, 22, 22'), coupled to one of the plurality of

line units . . . at least one remote access multiplexer (20)." However, with regards to the cited elements, Wegleitner states "conventional ***subscriber premises equipment 16*** have been ***connected directly*** to a serving central office 12 by twisted wire pair lines 18." In addition, Wegleitner states "a remote terminal 20 serves as the copper interface between the central office 12 and ***subscriber loops 22 and 22' for connecting the subscriber premises equipment*** 14 and 15 within the digital loop carrier serving area, respectively. In particular, the remote terminal 20 receives a set of ***optical fibers*** 24 carrying digitally multiplexed voice channels to and from the central office 12." col. 6 lines 21-47 (emphasis added).

Hence, Wegleitner fails to teach or suggest "at least one communication link, ***coupled to one of the plurality of line units***, that carries signals using digital subscriber line service, wherein each communication link is a ***twisted pair***; at least one remote access multiplexer, ***coupled to the at least one communication link***". Furthermore, nothing in Rawson or Wegleitner, taken alone or in combination, teaches or suggests the above limitation. Claim 28, therefore, is not obvious over Wegleitner in view of Rawson. Applicant respectfully requests that the rejection be withdrawn.

Claims 29-38 depend directly from claim 28 and, thus, are allowable for at least the reasons stated above with respect to claim 28. Applicant, therefore, requests that the rejections be withdrawn.

Claim 43:

A system for extending the effective distance of asymmetric digital subscriber line service, the system comprising:

a central office terminal, the central office terminal including:

a data interface;

a telephony interface; and

a plurality of line units;

at least one communication link, coupled to one of the plurality of line units, that carries signals using single pair high speed digital subscriber line service, wherein each communication link is a twisted pair;

at least one remote access multiplexer, coupled to the at least one communication link, wherein the at least one remote access multiplexer includes a plurality of ports that are adapted to provide asymmetric digital subscriber line service;

the remote access multiplexer adapted to multiplex signals between the plurality of ports and the at least one communication link; and

wherein the at least one remote access multiplexer is located at a distance from the central office terminal so as to provide digital subscriber line service to user terminals that are located more than 12 kilofeet from the central office terminal.

Applicant asserts that nothing in Wegleitner or Rawson, taken alone or together, teaches or suggests all the claimed limitations of claim 43. In particular, nothing in Wegleitner or Rawson teaches or suggests "at least one communication link, ***coupled to one of the plurality of line units***, that carries signals using single pair high speed digital subscriber line service, wherein each communication link is a ***twisted pair***" and "at least one remote access multiplexer, ***coupled to the at least one communication link***".

In rejecting claim 43, the Examiner stated "Wegleitner discloses a system for extending the effective distance of digital subscriber line service, the system comprising . . . a plurality of line units (16); at least one communication link (18, 22, 22'), coupled to one of the plurality of line units . . . at least one remote access multiplexer (20)." However, with regards to the cited elements, Wegleitner states "conventional ***subscriber premises equipment 16*** have been ***connected directly*** to a serving central office 12 by twisted wire pair lines 18." In addition, Wegleitner states "a remote terminal 20 serves as the copper interface between the central office 12 and ***subscriber loops 22 and 22' for connecting the subscriber premises equipment*** 14 and 15 within the digital loop carrier serving area, respectively. In particular, the remote terminal 20

receives a set of ***optical fibers*** 24 carrying digitally multiplexed voice channels to and from the central office 12." col. 6 lines 21-47 (emphasis added).

Hence, Wegleitner fails to teach or suggest "at least one communication link, ***coupled to one of the plurality of line units***, that carries signals using single pair high speed digital subscriber line service, wherein each communication link is a ***twisted pair***; at least one remote access multiplexer, ***coupled to the at least one communication link***". Furthermore, nothing in Rawson or Wegleitner, taken alone or in combination, teaches or suggests the above limitation. Claim 43, therefore, is not obvious over Wegleitner in view of Rawson. Applicant respectfully requests that the rejection be withdrawn.

Claim 44 depends directly from claim 43 and, thus, is allowable for at least the reasons stated above with regards to claim 43. Applicant, therefore, requests that the rejection be withdrawn.

Claims 7 and 34 were rejected under 35 USC § 103(a) as being unpatentable over Wegleitner et al. (U.S. Patent No. 6,480,487) in view of Rawson et al. (U.S. Patent No. 6,028,867) in further view of Gerszberg et al. (U.S. Patent No. 5,970,473).

Claims 7 and 34 depend directly from claims 1 and 28, respectively, and, thus, are allowable for at least the reasons stated above with regards to claims 1 and 28. In particular, Applicant asserts that nothing in Crowe, Rawson or Gerszberg, taken alone or in combination, teaches all of the claimed limitations as described above with regards to claims 1 and 28, respectively. Applicant, therefore, requests that the rejections be withdrawn.

CONCLUSION

Applicant respectfully submits that claims **1-11, 28-38, 43, 44** and **74-75** are in condition for allowance and notification to that effect is earnestly requested. If necessary, please charge any additional fees or credit overpayments to Deposit Account No. 502432.

If the Examiner has any questions or concerns regarding this application, please contact the undersigned at 612-332-4720.

Respectfully submitted,

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